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On Mexican Snakes of the Genera *Trimorphodon* and *Hypsiglena*

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(Plates XXXV-XXXIII, Text fig. 7)

ABSTRACT: This study is based on specimens collected in Mexico by Edward H. Taylor and Hobart M. Smith. The following species of *Trimorphodon* are recognized: *Trimorphodon bi-scutatus* Duméril and Bibron; *paucimaculatus* Taylor; *lambda* Cope; *vilkinsonii* Cope; *lyrophanes* (Cope); *vandenburghi* Klauber; *latifascia* Peters; *upsilon* Cope; and *tau* Cope.

Hypsiglena placed in synonymy of *Leptodeira* is again validated, and recognized as distinct on the basis of ungrooved back teeth, single instead of double apical pits, together with reduced vertebral series, and other characters of perhaps lesser importance.

The following forms are recognized: *Hypsiglena torquata torquata* Günther; *torquata dunklei* subsp. nov., Tamaulipas, Mexico; *affinis* Boulenger, and *ochrorhynchus* Cope.

Trimorphodon Cope

Dipsas (part.) Duméril and Bibron, *Erp. Gén.*, VII, 1854, p. 1133 (*D. bi-scutata* Duméril and Bibron).

Dipsadomorphus (part.) Günther, *Cat. Col. Snakes British Mus.*, 1858, p. 174 (*D. bi-scutata*, Duméril and Bibron).

Trimorphodon Cope, *Proc. Acad. Nat. Sci. Philadelphia*, 1861, p. 297. (*lyrophanes* Cope).

Eteirodipsas (part.) Jan, *Elenco sist. Ofid.*, 1863, p. 105.

Sibon (part.) Garman, *Mem. Mus. Comp. Zoöl. Harvard College*, VIII, No. 3, p. 16.

The group of back-fanged snakes belonging to this genus is characterized by greatly enlarged anterior maxillary teeth followed by smaller teeth which decrease somewhat posteriorly, and are followed after an interspace by a pair of enlarged, grooved fangs; anterior mandibular teeth and, to a lesser extent, the anterior palatine teeth, enlarged; head distinct from neck; two pairs of chinshields, the anterior largest; seven or eight scale rows between first ventrals and posterior lower labial; two loreals present, and frequently a third, which is situated below the posterior; nasal divided, the nostril vertically elongate; pupil elliptic; eye moderate, less than the distance

from nostril; usually three preoculars (two preoculars, one "subocular" and three postoculars); scales smooth (or bluntly keeled in males), slightly oblique, with paired apical pits, in 22-27 rows. Ventrals obtusely angulate; subcaudals divided; anal divided usually (single in *vandenburghi*). Body compressed.

I recognized nine forms, which I have here treated as full species. All save one of these are known to occur in Mexico. This exception, *vandenburghi*, has been taken at the border in the southern part of California and it is safe to state that it likewise occurs in Mexico in northern Baja California.

Four of the species, *T. vandenburghi*, *lyrophanes*, *upsilon*, and *bi-scutatus*, are represented by several specimens in museum collections. The other five forms are still rare. *Trimorphodon tau* is probably still known only from type; *paucimaculatus*, from type only; *lambda*, from three specimens; *vilkinsonii*, from two specimens, and *latifascia*, from three. It is, of course, probable that there are museum specimens of the latter five species that have not been reported in the literature.

Table of data on species of *Trimorphodon*

	Upper labials.	Average ventral-subcaudal total.	Scale rows.	Head markings.
<i>bi-scutatus (a)</i>	9	370 (362-376)	(25-27)-(17-16)	Chevrons.
<i>bi-scutatus (l)</i>	9	338 (333-348)	(25-27)-(17-16)	Chevrons.
<i>paucimaculatus</i>	9	329	25-17	Chevrons.
<i>lambda</i>	9	313 (309-317)	(22-23)-(16-15)	Chevrons.
<i>vilkinsonii</i>	9	308	23-17	3 black spots.
<i>lyrophanes</i>	9 (8)	306	(22-23)	Lyre-shaped mark.
<i>vandenburghi</i>	9 (8)	302 (299-304)	(21-23)-15	Lyre-shaped mark.
<i>latifascia</i>	9	293 (290-296)	25-15	Black, with red collar.
<i>upsilon</i>	8	288 (280-297)	(22-23)-15	Y-shaped mark and yellow collar.
<i>tau</i>	7	T-shaped mark.

Trimorphodon bi-scutatus (Duméril and Bibron)

(Plate XXV, fig. 1)

Dipsas bi-scutata Duméril and Bibron, *Erp. Gén.*, VII, 1854, p. 1153 (type description; type locality, "Mexique").

Dipsadomorphus biscutatus Günther, *Cat. Col. Snakes British Mus.*, 1858, p. 176 (México); Salvin, *Proc. Zool. Soc. London*, May 25, 1861, p. 228 (San Gerónimo, Vera Paz, Guatemala [27 scale rows]).

Trimorphodon bi-scutatus Cope, *Proc. Acad. Nat. Sci. Philadelphia*, 1861, p. 297; and *Proc. Amer. Philos. Soc.*, XI, 1869, p. 152; Sumichrast, *Arch. Sci. Phys. Natur.*, 46, 1873, p. 247; and *idem*, pp. 253-255; Dugès, *La Nature*, VI, 1883(?), pp. 145-148, figs. 3a, 4a,

5a, (Venom); Cope, Proc. Amer. Philos. Soc. XXIII, 1886, p. 286; and Proc. U. S. Nat. Mus., XIV, 1891 (1892), p. 679; Stejneger, Ann. Rept. U. S. Nat. Mus., 1893 (1895), pp. 348, 349; Günther, Biologia Centrali-Americana, Rept. Batr., May 1895, pp. 174-175 (*part.*); Boulenger Cat. Snakes Brit. Mus., 2d Ed., 1896, pp. 54, 55 (*part.*); Cope, Amer. Nat., Dec., 1896, p. 1025; Cope, Ann. Rept. U. S. Nat. Mus., 1898 (1900) p. 1101; Gadow, Proc. Zool. Soc. London, 1905, p. 224; Mœquard, Mission Scientifique au Mexique et dans l'Amérique Centrale, Rept., livr. 16, 1908, pp. 908-909; Gadow, Zool. Jahrb., Bd. 29, Heft. 6, 1910, p. 699; Werner, Mitt. Nat. Mus. Hamburg, 30, 1913, pp. 29-30; Schmidt, Field Mus. Nat. Hist. Zool. Publ., XII, 1928, p. 199; Werner, Zool. Jahrb., 57, 1929, p. 181; Amaral, Mem. Inst. Butantan, IV, 1929, p. 201.

Eteirodipsas biscutata Jan, Elenco Sist. Ofid., 1863, p. 105.

Trimorphodon major Cope, Proc. Amer. Philos. Soc., XI, 1869, p. 153, and Journ. Acad. Nat. Sci. Philadelphia, (2), VIII, 1876, p. 131; Sumichrast, Arch. Sci. Phys. Natur., 46, 1873, p. 247; *idem*, pp. 254-256.

Sibon biscutatatum Garman, Mem. Mus. Comp. Zool. Harvard College, VIII, No. 3, 1883, pp. 16, 134.

Dipsas biscutata Herrera, Cat. Coll. Rept. Batr. Mus. Nac. Mexico, 1904, p. 38 (Guanaajuato).

This species is represented in my collection by eight specimens as follows: EHT, Nos. 5338, 5339, Hda. El Sabino, Michoacán, Raymond Bresson, collector, Oct., 1935; 5145-5148, Agua del Obispo, km. 350-357, between Rincón and Cajones, Guerrero, elevation 1,000 m., August 1, 1936, E. H. Taylor, collector; 4588, one mile north of Organos, Guerrero, elevation 200 m., June, 1932, E. H. Taylor, collector; 4589, San Ricardo, Chiapas, September 2, 1935, H. M. Smith, collector.

The series of specimens reported under this name by Boulenger (1896) may very probably include more than one form. I have elsewhere* suggested that the specimens from Mazatlán and Presidio, Sinaloa, may belong to *Trimorphodon paucimaculatus* Taylor.

My series shows two varieties. The two Michoacán specimens have a greatly reduced number of spots on body and tail (14-7, 14-7) as compared with those from Guerrero, which average a total of 32 spots. They agree, however, in the very high ventral and subcaudal counts, the average of the total ventral-subcaudal count being 371. The single specimen from Chiapas, a male, has the ventral count reduced, the total ventral-subcaudal count being 346. In the specimens listed by Boulenger (1896) from Oaxaca, Guatemala (2 specimens), Panama and Central America, the range of the totals is 327 (Oaxaca) to 348 (Panama), the average, with my Chiapas specimen, being 339. Schmidt (*loc. cit.*) reports a specimen from Salvador with a total count of 340.†

Males have the scales of the posterior half or third of the body bluntly keeled, or ridged; they appear more pronounced in the largest specimens, especially above the anal region and on the tail.

* Taylor, Kansas Univ. Sci. Bull. Vol. XXIV, 1937, p. 529.

† This specimen has scale rows, 25-17, ventrals, 255, subcaudals, 85; upper labials, 7-9; lower labials, 13-12, preoculars, 3-3; postoculars, 3-3; temporals, 3-3; length, 878 mm.; tail, 158 mm.; ratio tail to total length, 18.

Werner (1913) reports a specimen 1.545 mm. long, with the scales strongly keeled.

Table of data for *Trimorphodon bi-scutatus*

Number	5145	5146	5147	5148	4588	4589	5338	5339
Sex	♂	♂	♂	♂	♂	♀	♂	♂
Ventrals	275	274	272	272	270	261	269	267
Subcaudals	101	99	99	102	100	85	101	95
Anal	2	2	2	2	2	2	2	2
Supralabials	9-9	9-9	9-9	9-9	9-9	9-9	9-9	9-9
Infralabials	11-13	13-13	13-14	12-12	14-12	10-12	13-12	13-13
Preoculars	3-3	3-4	3-3	3-3	3-3	3-3	3-3	3-3
Postoculars	3-3	3-3	3-3	3-3	3-3	3-3	3-3	3-3
Loreals	2-2	3-3	2-2	2-2	2-2	3-3	3-3	3-3
Body spots	19	21	20	19	24	21	14	14
Tail spots	11	10	12	13	11	10	7	7
Total length	653	689	575	642	440	574	938	875
Tail	118	128	101	116	73	90	180	166
Frontal touches preoculars	no*	yes	yes	yes	yes	yes	yes	yes
Temporals	3,3,4	3,3,5	2,3,5	3,4,4	3,4,5	3,3,4	3,1,4,4	2,3,4
	3,4,4	3,3,5	3,4,5	3,4,4	3,3,5	3,3,4	3,1,4,4	2,3,4
Scales touch chinshield's	4-4	5-4	5-5	5-5	4-4	5-4	4-4	5-5
Scale rows †	24	25	25	25	25	27	25-27	25-27

* Abnormal.

† The counts are (in the above order) 38, 23, 24, 25, 16; 36, 24, 25, 23, 16; 38, 24, 25, 25, 17; 38, 25, 25, 26, 17; 36, 25, 25, 25, 17; 36, 25, 27, 27, 17; 37, 25, 27, 25, 17; 36, 25, 27, 25, 17.

Trimorphodon paucimaculatus Taylor

Trimorphodon paucimaculatus Taylor, Univ. Kansas Sci. Bull., Vol. XXIV, 1936 (Feb. 15, 1938), pp. 527-529, pl. 46, fig. 1 (type description; type locality, Mazatlán, Sinaloa, Taylor, collector).

This species has been discussed at length in the above publication. No further specimens have been taken.

A character not previously mentioned, which differentiates this form from *bi-scutatus*, is the absence of keels or ridges on the scales in the males. This form is probably confined to the lowland coastal region in Sinaloa, and adjoining states.

Trimorphodon lambda Cope

(Plate XXXV; fig. 4)

Trimorphodon lambda Cope, Proc. Amer. Philos. Soc., 1886, pp. 286, 287 (type description; type locality, Guaymas, Sonora; Emerich, collector); Bull. U. S. Nat. Mus., No. 32, 1887, p. 68; Proc. U. S. Nat. Mus., 14, 1891 (1892), pp. 678-679; Ann. Rept. U. S. Nat. Mus., 1898 (1900), p. 1104; Taylor, Univ. Kansas Sci. Bull., 24, 1936 (1938) pp. 495-497.

Trimorphodon bi-scutatus Günther, *Biologia Centrali-Americana*, Rept. Batr., May, 1895, pp. 174-175 (*part.*); Boulenger, *Cat. Snakes British Mus.* (2), III, 1896, p. 54 (*part.*).

Two specimens in my collection were discussed previously (Taylor *op. cit.*). The dental characters of a third specimen (EHT. 341A. skeleton) follows: Four anterior maxillary teeth enlarged, strongly curved, the first more slender and shorter than the others, the third largest of all the teeth; the middle part of the maxillary occupied by five teeth scarcely half the length and thickness of the preceding teeth; this group followed by one (two on right side) large, grooved fang, slightly curved, directed somewhat backward; seven palatine teeth, the anterior three or four considerably larger than others; about 15 equal ptergoid teeth; about 17 or 18 mandibular teeth, the anterior two or three enlarged.

The relationship of this form is with *Trimorphodon lyrophanes* (Cope). There are apparent differences in dentition and it is likely that two is the normal number of loreals. Known only from southern Sinaloa, Mexico. I suspect the species occurs also in Arizona, where it has probably been confused with *T. lyrophanes*.

Trimorphodon wilkinsonii Cope

(Plate XXXVIII, Text. fig. 1)

Trimorphodon wilkinsonii Cope, *Proc. Amer. Phil. Soc.*, 23, 1886, pp. 285-286 (type description: type locality, Chihuahua, Chihuahua; Wilkinson, collector), and *Proc. U. S. Nat. Mus.*, 14, 1891, p. 679; Günther, *Biologia Centrali-Americana*, Rept. Batr., May, 1895, p. 174; Cope, *Amer. Naturalist*, Dec., 1896, p. 1014; and *Ann. Rept. U. S. Nat. Mus.*, 1898 (1900), pp. 1105-1106; Crimmins, *Copeia*, No. 138, 1925, p. 7 (in Texas); Werner, *Zoöl. Jahrb.*, 37, 1929, p. 181; Stejneger and Barbour, *Check list Amer. Amph. Rept.*, 3d Ed., 1933, p. 128.

Trimorphodon wilkinsonii Cope, *Bull. U. S. Nat. Mus.*, No. 32, 1887, p. 68.

Trimorphodon upsilon Boulenger, *Cat. Snakes Brit. Mus.* 2d Ed. Vol. III, p. 55, (*part.*).

The type of this species is USNM No. 14268. Scale formula, 30, 21, 23, 17; upper labials, 11-11, the first five touching the anterior chinshields, which are more than double the size of the posterior. First neck band 5-6 scale rows wide, narrowing medially, while the white border widens medially.

The known range of the species is Chihuahua, Mexico, and extreme western Texas.

A second specimen which I have been privileged to examine is one in the Blanchard collection, collected three miles northwest of El Paso, close to the Rio Grande on the road to Las Cruces, June, 1935. It presents the following characters: Rostral very much wider than high, folding back on the snout so that part visible above is less than one third its distance from frontal, its length about equal to the suture between the supranasals; greatest length of the supranasal three fifths to three fourths the length of prefrontals; suture be-

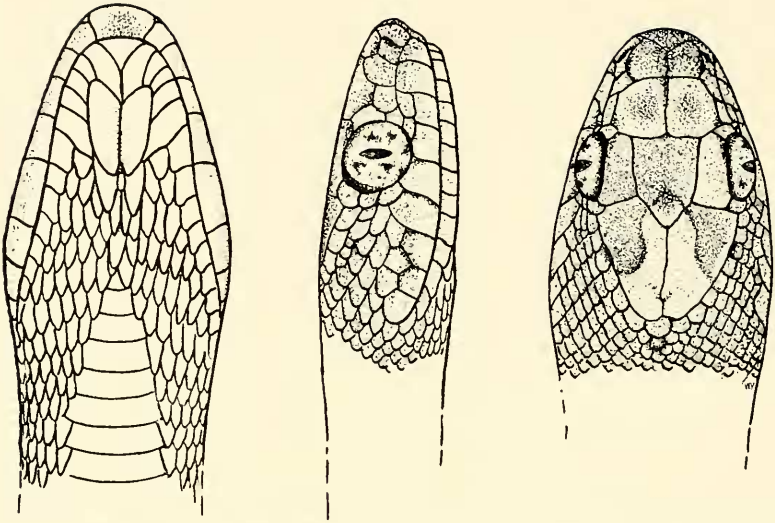


FIG. 1. *Trimorphodon wilkinsonii* Cope. Actual head width, 12 mm.; snout to end of parietal, 16 mm.

tween the internasals less than half the prefrontal suture; frontal width, 3.7 mm.; length, 5.1 mm., slightly shorter than its distance to tip of snout (5.4 mm.); length of parietal, 7 mm.; parietal to tip of snout, 10 mm.; nasal distinctly divided; three loreal scales; three preoculars; three postoculars; upper labials, 9-9, the seventh divided transversely on left side; lower labials, 13-13; temporals, 3 + 4 + 6; 3 + 5 + 5; five labials touch chinshields; second pair of chinshields completely separated; about four pairs of scales between second chinshields and first widened ventral scale; scales with double apical pits; scale formula: 34, 22, 22, 23, 18, 16; ventrals, 228; subcaudals, 79; anal undivided.

Color. Brownish-gray with a series of somewhat irregularly-shaped blackish transverse blotches; first, 9 or 10 scales back of the parietals, somewhat narrowed on the median line, its greatest length equal to seven scales, not reaching third scale row laterally; this blotch followed by 27 blotches on body and tail; each blotch is grayish in the middle, and is bordered by creamy gray; 9 blotches on tail; forty-five pairs of ventrolateral spots touching outer scale row, but for the most part on the ventrals, occasionally confluent with the dorsal blotches, which usually terminate on second scale row (except first blotch which is narrowest of all). The markings on the head are diffuse, but there is evidence of a pattern with darker areas on the prefrontals, frontal and parietals.

I owe thanks to Dr. H. K. Gloyd for the privilege of studying this specimen.

There is a third specimen of this rare species now in the American Museum of Natural History, collected at a point "five miles north of El Paso, Texas, on the east slope of Mt. Franklin."

Trimorphodon lyrophanes (Cope)

Lycodon lyrophanes Cope, Proc. Acad. Nat. Sci. Philadelphia, 1860, p. 343 (type description; type locality, "Cape St. Lucas," Baja California).

Trimorphodon lyrophanes Cope, Proc. Acad. Nat. Sci. Philadelphia, 1861, p. 297; Proc. Amer. Philos. Soc., 1886, p. 286; Bull. U. S. Nat. Mus., No. 1, 1875, p. 38; and *idem*, 32, 1887, p. 68; Proc. Amer. Philos. Soc., Apr. 1886, XXIII, No. 122, p. 286; Cope, Proc. U. S. Nat. Mus., XIV, 1891 (1892), p. 679; Van Denburgh, Proc. Cal. Acad. Sci., (2), 5, 1895, p. 155; Mocquard, Nouv. Arch. Mus. Hist. Nat., Paris, (4), 1, 1899, p. 330; Cope, Ann. Rept. U. S. Nat. Mus., 1898 (1900), p. 1102, fig. 314; Stejneger and Barbour, Check list N. Amer. Amph. Rept., 1917, pp. 104-105.; and 2d Ed., 1923, p. 118; and 3d Ed., 1933, p. 127; Van Denburgh and Slevin, Proc. Cal. Acad. Sci., (4), 11, No. 4, 1921, p. 70; Schmidt, Bull. Amer. Mus. Nat. Hist., 46, 1922, p. 697; Van Denburgh, Occ. Papers California Acad. Sci., X, Vol. 11, Nov. 23, 1922, pp. 884-887; Klauber, Trans. San Diego Soc. Nat. Hist., Vol. 5, No., 11, 1928, pp. 185-187, 190-192; Werner, Zoöl. Jahrb., 37, 1929, p. 181; Linsdale, Univ. California Publ. Zoöl., 38, No. 6, 1932, p. 383.

Klauber (1928) gives the following data on the scutellation of this form: "Scale rows usually 22 or 23 (rarely 20, 21 or 24). Ventrals: 223 to 243, average 232. Anal generally divided (13 divided, 1 entire). Caudals, 68 to 81 pairs, average 73; supralabials, usually 8 or 9, rarely 7 or 10; infralabials, 10-14; preoculars, 2 or 3, normally 3; postoculars, normally 3, rarely 4. Loreals two, with a posterior subloreal usually present. Temporals, 2+3 or 3+4, occasionally 2+4 or 3+3. Body spots, 21 to 33, average 27.5; tail spots, 10 to 14, average 12."

It will be noted that *T. lyrophanes* differs from *lambda* in having a smaller number of spots on the tail (In *lambda* 17 to 18); a slightly lower range of subcaudals (83-87 in *lambda*) and, as pointed out under the discussion of *lambda*, there is considerable difference in the teeth.

The known range is Baja California, Arizona, and very probably also northern Sonora.

Trimorphodon vandenburghi Klauber

(Plate XXXVI, fig. 1)

Trimorphodon vandenburghi Klauber, Bull. Zoöl. Soc. San Diego, No. 1, June, 1924, pp. 77-18, fig. 3 (type description; type locality, Wildwood Ranch [elevation 1,520 feet] near Ramona, San Diego county, California, E. B. Woodworth and L. M. Klauber, collectors); Trans. San Diego Soc. Nat. Hist., V, No. 11, 1928, pp. 183-194, plates 22, 23 (Los Angeles, Riverside, and San Diego counties, Southern California); Bull. San Diego Nat. Hist. Soc., No. 4, 1928, p. 5; Copeia, No. 170, 1929, p. 21, (Kern and Imperial counties, California); Bull. San Diego Nat. Hist. Soc., No. 5, 1930, p. 6; and No. 8, 1931, pp. 3, 10, 12, 16, 17, 18, 20, 23, 24, 32, 33, 35, 44, 45, 51, 52, 62, 72; and No. 11, 1934, pp. 20, 21; Stejneger and Barbour, Check list N. Amer. Amph. Rept., 3d Ed., 1933, p. 128 (Kern, Imperial, Inyo and San Diego counties, California).

I collected a single specimen (Kansas University Mus. 8497) of this species from under a flake, pried from a granite boulder a few miles east of San Diego, Cal., September 1, 1928. The specimen agrees with the type description in all pertinent characters. The proximity of this and other records to the Mexican border (Dulzura, San Diego county, from which Klauber [1928] records a specimen, is also near the border) suggests that the species is a habitant of the northern part of Baja California.

Ventrals, 239; anal entire; subcaudals, 65; upper labials, 9-9; lower labials, 12-13, five touching anterior chinshields; preoculars, postoculars and loreals, 3-3; head (mm.), 13.5×11 ; frontal shorter than its distance to end of snout; 40 blotches on body, 16 on tail; total length, 485; tail, 72.

The undivided anal scute (rarely divided) will separate this form from its congeners in most cases.

Trimorphodon latifascia (Peters)

(Plate XXXVI, fig. 2)

Trimorphodon biscutatus var. *latifascia* Peters, Monatsb. Akad. Wiss. Berlin, 1869, p. 877 (type description; type locality, Puebla, México; Docteur Berkenbusch, collector).

Trimorphodon collaris Cope, Journ. Acad. Sci. Philadelphia, (2), VIII, 1876, p. 13 (type description; type locality, Orizaba, Veraacruz; Docteur Sumichrast, collector); and Proc. U. S. Nat. Mus., XIV, 1891, p. 679.

? *Sibon biscutatum* var. *latifasciatum* Garman, Mem. Mus. Comp. Zool. VIII, No. 3, 1883, p. 16-17.

Trimorphodon upsilon Boulenger, Cat. Snakes British Mus. (2), III, pp. 55, 56 (*part.*); Cope, Ann. Rept. U. S. Nat. Mus. 1898 (1900), pp. 1104-1105 (*part.*).

The discovery of a specimen of *Trimorphodon*, related to, but distinct from *Trimorphodon upsilon* necessitates the revival of Peters' name *latifascia*. Cope described a species, *Trimorphodon collaris* seven years after *latifascia* was described, but it seems to be a synonym. My specimen was obtained twelve miles south of Puente de Ixtla, Morelos.

Peters' description, though brief, offers the following data: Scales in 21 to 22 rows; ventrals, 206 to 210; 13 to 14 broad, transverse bands on body; 5 to 6 on the tail. Bands gray-brown, edged with black. No distinct V-shaped markings on the head; a bright neck-band, which, upon the parietals, forms a V-shaped indentation and covers the temporal region and three posterior supralabials.

My specimen (EHT No. 5439) and the type of *Trimorphodon collaris* Cope (USNM No. 26499) have the following characteristics, respectively: Ventrals, 218, 211; subcaudals, 78, 79; upper labials, 9-9, 9-9; lower labials, 12-13, 12-12; preoculars, 3-3, 3-3; postoculars, 3-3, 3-3; loreals, 3-2, 3-3; scale formula, 33, 25, 23, 23, 15;

31, 25, 23, 23, 15; scales touching chinshields, 5-6, 4-5; anal divided in both; temporals, 3, 4, 5; (3, 3, 4, 5), and 3, 4, 5; body spots, 15, 16; tail spots, 8, 8. Total length, 256 mm.; tail, 42 mm.

My specimen presents the following additional characters: 8th labial does not reach the lip; rostral very short, about one fifth its distance from the frontal; frontal one fourth longer than its distance from end of snout, and one sixth shorter than the parietals (about as long in type of *collaris*); total length, 256 mm.; tail length, 42 mm.; frontal, 3.5 mm. \times 2.7 mm.; head, 11.1 mm. \times 7 mm.; eye, 2.5 mm.; eye to nostril, 2.5 mm. The frontal not in contact with pre-ocular (in contact in type of *collaris*).

The bands on the back are wide, the four anterior on back covering 19, 15, 16, 16 scales, respectively, the intervening red spaces $3\frac{1}{2}$ or 3 scales wide on median line; the black bands are much narrowed below, the first four covering 8, 9, 9, 7 ventrals while the intervening reddish color covers 10, 9, 9, 10 ventrals; posteriorly the dark bands become narrowed, covering four or five ventrals; the reddish areas cover 12 ventrals. However, throughout the body there are intercalated dark spots tending to divide the red areas, crossing ventrals and extending up to fourth lateral scale row; the black bands have a trace of a white line dividing the spots transversely.

The top of the head is black, less dense on the tip of snout; the first red collar is about four scales wide medially, tending to encroach on the parietals; last three labials red, the fourth to sixth with red spots (reddish areas probably brown in adults).

Trimorphodon upsilon Cope

(Plate XXXV, fig. 2)

Trimorphodon upsilon Cope, Proc. Amer. Philos. Soc., XI, 1869, p. 152 (type description; type locality, "Guadalajara" West Mexico, I. I. Major, C.), and *idem*, XXIII, 1886, p. 286; Bull. U. S. Nat. Mus., No. 32, 1887, p. 68 (Batopilas, Chihuahua; Guanajuato; Zaualtipan, Hidalgo); Cope, Proc. U. S. Nat. Mus., XIV, 1891, p. 678; Günther, Biologia Centrali-Americana, Rept., May 1895, p. 175 (Ventanas, Durango; Guanajuato; La Cumbre de los Arrastrados, Jalisco [?]; Jalapa, Veracruz); Boulenger, Cat. Snakes Brit. Mus., 2d Ed. III, 1896, p. 54; Cope, Ann. Rept. U. S. Nat. Mus., 1898 (1900), pp. 1104-1105, fig. 315; Mocquard, Bull. Soc. Phil. Paris (9), I, No. 4, 1899, p. 157 ("Sierra del Nayarit"); Gadow, Proc. Zool. Soc. London, June 6, 1905, pp. 224, 231, 233 (distribution); Mocquard, Mission Scientifique au Mexique et dans l'Amérique Centrale, Rept., livr. 16, 1908, pp. 910-911, pl. 74, figs. 2, 2a, 2b; Gadow, Zool. Jahrb., Bd. 29, Heft. 6, 1910, pp. 666, 697, 701, 702 (ranges in elevation from about 1,000 feet to 7,000 feet); Amaral, Mem. Inst. Butantan, IV, 1929, p. 202.

Eteirodipsas biscutata Jan, Icon Ofid. XXXIX, 1872, pl. I, fig. 3.

Sibon upsilon Garman, Mem. Mus. Comp. Zool., VII, No. 3, 1883, p. 134.

A single specimen (EHT, No. 4569; length, 656; tail, 130 mm.) of this species was taken by Dr. Hobart Smith near Magdalena, Jalisco, June 17, 1935, at an elevation of 1,300 m. I have also

examined several specimens of this form in the United States National Museum. Several specimens lack locality data. These are USNM. Nos. 9912 (2 specimens), 25361, 26138, and 26139. They were collected by Dugès and are probably from Guanajuato. Nos. 21419 and 31358, Type, Guadalajara, Jal; No. 46334, San Juan Capistrano, Zacatecas.

The range of the form is chiefly in western Mexico from Chihuahua south through Durango, Guanajuato, Jalisco and Nayarit. Cope's (1887) specimen from Zacualtipan, Hidalgo, and Günther's (1895) from Jalapa, Veracruz, are the only records for the eastern side of the plateau.

The following table includes data taken from certain of these specimens.

Table of data on *Trimorphodon upsilon* Cope

Number	9912	9912A	12419	25361	26138	4569	31358	46334
Museum	USNM	USNM	USNM	USNM	USNM	EHT	USNM	USNM
Sex	♂	♀	?	♀ (?)	♀	♂	♂	♀
Ventrals	217	228	218	223	211	222	222	232
Subcaudals	69	59	62	66	68	75	73	61
Preoculars	3-3	3-3	3-3	3-3	3-3	3-3	3-3	3-3
Postoculars	3-3	3-3	3-3	3-3	3-3	3-3	3-3	3-3
Loreals	3-3	3-3	2-2	3-2	2-2	2-2	3-3	3-3
Upper labials	8-8	8-8	8-8	8-8	8-8	8-8	8-8	9-9
Lower labials	12-12	13-13	12-12	11-12	12-12	12-11	11-11	11-13
Scales touch chinshields			4-4	4-4		4-4	4-5	5-5
Temporals		3, 3, 4				3, 4, 5	3, 3, 3	2, 4, 5
Bands, body	30	28	23	31	28	25	24	29
Bands, tail	15	11	11	13	15	13	13	11

Scale formulae, No. 9912, 31, 22, 22, 21, 15; 9912A, 30, 23, 23, 24, 16; 26138, 32, 24, 22, 22, 16; 4569, 30, 22, 22, 17, 15.

Trimorphodon tau Cope

Trimorphodon tau Cope, Proc. Amer. Philos. Soc., 9, 1869, p. 152 (type description; type locality, Isthmus of Tehuantepec, México); and *idem*, Vol. 23, 1886, p. 286; Bull. U. S. Nat. Mus., No. 32, 1887, p. 68; Proc. U. S. Nat. Mus., 14, 1891, p. 678 (key); Günther, Biologia Centrali-Americana, Rept. Batr., May 1895, p. 174; Boulenger, Cat. Snakes Brit. Mus., 2d Ed. 1896, p. 56; Cope, Ann. Rept. U. S. Nat. Mus. 1898 (1900), p. 1101; (?) Mocquard, Bull. Soc. Phil. Paris (9), I, No. 4, 1899, p. 157 (Jalisco, Diguët, collector); Mocquard, Mission Scientifique au Mexique et dans l'Amérique Centrale, Rept., livr. 16, 1908, p. 912; Gadow, Proc. Zool. Soc. London, 1905, p. 224; Amaral, Mem. Inst. Butantan, IV, 1929, p. 202.

The type of the species is probably the only known specimen. Mocquard (1899) lists a specimen from Jalisco, but later (Moc-

guard, 1908) states that the type is the only known specimen. Whether the specimen listed in 1899 is lost or has received another designation I cannot say.

I have examined the type (USNM. No. 30338, Tehuantepec, Sumichrast, collector). It is in rather bad condition, being much softened. The striking head pattern is still quite evident. The scale formula is 31, 21, 23, 15. It is known definitely only from the type locality. The following data are given in the type description:

Scales in twenty-three series. Muzzle projecting considerably beyond the mouth. Rostral plate somewhat produced behind; internasals about one fourth size of prefrontals, which are as long as wide. Frontal with straight lateral margins. Parietals not longer than frontal, regularly rounded behind. Nostril in middle of nasal. Three loreals, three postoculars, three preoculars. Temporals, 2+3+4; six upper labials, the fifth probably composed of two plates fused, as it is twice as long as deep on both sides. The fourth and fifth enter the orbit, the third is cut down by the lower loreal and preocular. Lower labials, eleven. Body strongly compressed. Total length, 236; tail, 35.

Above gray with twenty-three jet-black rhombs, which extend to the ventrals by their lateral angles. Tail with ten rhombs; sides of belly black spotted. Head gray with a black mark above as far as the middle of the parietals, but with two, lateral, ear-shaped projections on the same; a pale T-shaped mark extends transversely between the orbits, and longitudinally to the end of the muzzle.

Hypsiglena Cope

Leptodeira (part.) Günther, Ann. Mag. Nat. Hist. (3), V, 1860, p. 170.

Hypsiglena Cope, Proc. Acad. Nat. Sci. Philadelphia, June, 1860, p. 246 (generic description; type *ochrorhynchus*).

Pseudodipsas Peters, Monatsb. Akad. Wiss. Berlin, 1860, p. 521.

Comastes Jan, Elenco Sist. Ofid., 1863, p. 102.

Body small, slender, somewhat cylindrical; head distinct from body, the snout projecting beyond mouth; head plates normal; two nasals distinct or united above nostril; two (or three) preoculars, two postoculars; loreal present. Temporals, normally 1-2; scales smooth (save on sides above anus in males), in 19-21 rows; apical pits single; anal plate divided; eye very small, pupil vertically elliptic; tail very short, less than one fourth body length; ventrals not angulate; subcaudals divided; anterior maxillary teeth four to eight, subequal, followed after a space by one or two large, ungrooved, fanglike teeth.

I am fully convinced that the species here considered under this

genus, *H. torquata torquata*, *H. t. dunklei* subsp. nov., *H. affinis*, and *H. ochrorhynchus*, form a generic group related to *Leptodeira*, but differing in having the snout projecting more, a proportionally smaller eye, a much shortened tail, usually less than 10 maxillary teeth, single apical pits, posterior fangs lacking grooves; a smaller number of subcaudal scales. I have not regarded *Leptodeira guillemi* Boulenger (*Hypsiglena latifasciata* Günther) or *Leptodeira discolor* Günther as belonging in the genus *Hypsiglena*.

Günther (Oct., 1894), *loc. cit.*, confused his specimens of *Hypsiglena*, throwing together as one species all the species here recognized (*i. e.*, *torquata*, *ochrorhynchus*, and *affinis*). Boulenger (1894) on the other hand, using the same specimens available to Günther, recognized the three species.

With accumulation of more material from western Mexico it will be possible, no doubt, to demonstrate that certain forms included under *torquata torquata* are worthy of subspecific designation.

KEY TO THE FORMS OF HYPSIGLENA

- A. Scales in 19 rows around middle of body; a single preocular; upper labials 7, lower labials 10; ventral-subcaudal count 207-213; head narrow, with about 23 scales about posterior part of head; a light nuchal band.....*H. affinis* Bouleng. r.
- AA. Scales in 21 rows around middle of body; two preoculars (1 preocular, one subocular); upper labials 7 or 8;
- B. No light neck band; first nuchal spot single (rarely divided into two or three parts) connecting with dark lines behind eyes.....*H. ochrorhynchus* Cope.
- BB. A light nuchal band, not or rarely interrupted medially or laterally, sometimes involving part of parietal region.
- C. Rostral large, pushing far in between prefrontals, the part visible about equal to three fourths the distance between rostral and frontal; head broad, 30 scales about posterior part of head; 8 upper labials; 11 lower labials; knobs or keels on lateral scales above anus in males; 162 ventrals; 57 subcaudals (male).....*H. torquata dunklei* subsp. nov.
- CC. Rostral not pushing between the prefrontals or but slightly; part visible above equal to one half or less of the distance between the rostral and frontal; 25 or less scales about back part of head; upper labials, 7 or 8; lower labials, 9 or 10; apparently no scales with keels or knobs on sides above anus in males; ventrals, 164-174; subcaudals, 36-56

H. torquata torquata Günther.

Hypsiglena ochrorhynchus Cope

Hypsiglena ochrorhynchus Cope, Proc. Acad. Nat. Sci. Philadelphia, 12, Nov. 15, 1860, p. 246 (type description; type locality, "Cape St. Lucas," Baja California, John Xantus, collector); and Bull. U. S. Nat. Mus., No. 1, 1875, p. 38; Lockington, Amer. Nat., XIV, 1880, p. 295; Yarrow, Bull. U. S. Nat. Mus., No. 24, 1883, pp. 15, 97 (Cape San Lucas, La Paz, Baja California; Durango, Mexico); Garman, Mem. Comp. Zool., Harvard College, VIII, No. 3, 1883, pp. 80, 161; Cragin, Bull. Washburn College Lab. Nat. Hist., 1, 1884, p. 8 (Guaymas, Mex.); Cope, Proc. Amer. Philos. Soc. Philadelphia, XXIII, p. 285 (Chihuahua); and Bull. U. S. Nat. Mus., No. 32, 1887, p. 78; Belding, West Amer. Scient., III, No. 24, 1887, p. 98; Cope, Proc. U. S. Nat. Mus., XIV, 1891 (1892), p. 617; Stejneger, N. Amer. Fauna, No. 7, May, 1893, pp. 204, 205 (Cape St. Lucas); Boulenger, Cat. Snakes British Mus., Vol. II, 1894, p. 209; Van Denburgh, Proc. Cal. Acad. Sci. (2), Vol. 5, 1895, p. 145; Occ. Papers Cal. Acad. Sci., V, 1897, p. 178; Mocquard, Nouv. Arch. Mus. Hist. Nat., Paris, (4), 1, 1899, p. 325 (Mulege, Baja California); Cope, Ann. Rept. U. S. Nat. Mus.,

1898 (1900), p. 953, fig. 245; Brown, Proc. Acad. Nat. Sci., Philadelphia, 1901, p. 87; Van Denburgh, Proc. Cal. Acad. Sci. (3), Zoöl., Vol. 4, No. 5, 1906, p. 65; Ditmars' Reptile Book, 1907, p. 329, pl. CI, fig. 1; Grinnell, Univ. Cal. Publ. Zoöl., Vol. 5, No. 1, 1908, p. 165; Van Denburgh and Slevin, Proc. California Acad. Sci. (4), Vol. 3, 1913, p. 414; Atsatt, Univ. California Publ. Zoöl., 12, No. 3, 1913, p. 42; Ruthling, Copeia, No. 15, 1915; Van Denburgh and Slevin, Proc. California Acad. Sci., (4), 5, 1915, p. 106; Grinnell and Camp, Univ. California Publ. Zoöl., 17, No. 10, p. 188; Bentley, Copeia, No. 61, 1918, p. 83; Cowles, Journ. Ent. Zoöl. Pomona College, XII, 3, 1920, 66; Stevens, Trans. San Diego Soc. Nat. Hist. III, 4, 1921, p. 64; Nelson, Mem. Nat. Acad. Sci., XVI, 1921, pp. 114, 115; Klauber, Bull. Zoöl. Soc. San Diego, No. 8, 1931, p. 71, and No. 9, 1932, pp. 25, 80; and Copeia, Oct. 7, 1932, No. 3, p. 126; Linsdale, Univ. California Publ. Zoöl., 38, No. 6, 1932, p. 380 (San Ignacio, Comondú and Eureka in Baja California); Stejneger and Barbour, Check list N. Amer. Amph. Rept., 3d Ed., 1933, p. 113; Allen, Occ. Papers Mus. Zoöl. Univ. Mich., No. 259, p. 12 (Hermosillo, Son.); Klauber, Bull. Zoöl. Soc. San Diego, No. 11, 1934, p. 19; Taylor, Univ. Kansas Sci. Bull., 24, 1936 (Feb. 15, 1938), pp. 494-495.

Hypsiglena chlorophaea, Cope, Proc. Acad. Nat. Sci., Philadelphia, 1860, p. 247 (type description); type locality, Fort Buchanan, Arizona, Irwin, collector; Stejneger, N. Amer. Fauna, No. 7, 1893, p. 205; Mocquard, Nouv. Arch. Mus. Hist. Nat., Paris, (4), I, 1899, p. 325, and Mission Scientifique au Mexique et dans l'Amérique Centrale, livr. 16, 1908, p. 869, pl. 69, fig. 1, 1a-d; Garman, Bull. Essex Inst., 16, Jan. 9, 1884, p. 30.

Hypsiglena ochrorhynchus chlorophaea Cope, Proc. Acad. Nat. Sci., Philadelphia, 1866, p. 304; and Bull. U. S. Nat. Mus., No. 1, 1875, p. 38 (Arizona); Cones, Wheeler's Rept. Surv. W. 100th Merid., V, 1875, p. 622; Yarrow, Bull. U. S. Nat. Mus. No. 24, 1883, pp. 15, 97, 190; Garman, Mem. Mus. Comp. Zoöl., Harvard College, VIII, No. 3, 1883, pp. 80, 161; and Bull. Essex Inst., 16, 1884, p. 30.

Hypsiglena torquata Biologia Centrali-Americana, Rept. Batr., Oct., 1894, p. 137 (*part.*); Mocquard, Mission Scientifique au Mexique et dans l'Amérique Centrale, Rept., livr. 16, 1908, pp. 866-868, pl. 69, figs. 3, 3a, 3c, 3d (*part.*) (He states, Bocourt believed *H. ochrorhynchus* distinct from *H. torquata*).

Hypsiglena ochrorhynchus ochrorhynchus Stejneger and Barbour, Check list N. Amer. Amph. Rept., 1917, p. 93; Van Denburgh and Slevin, Proc. California Acad. Sci., (4), XI, 1921, pp. 28, 52, 68; Schmidt, Bull. Amer. Mus. Nat. Hist., XLVI, Dec. 7, 1922, p. 692; Klauber, Bull. Zoöl. Soc. San Diego, No. 1, June 1, 1925, p. 16; Van Denburgh, Occ. Papers California Acad. Sci., X, 2, pp. 780, 783, pl. 85; Stejneger and Barbour, Check list N. Amer. Amph. Rept., 2d Ed., 1923, p. 104.

Leptodeira torquata venusta Dunn, Proc. Nat. Acad. Sci. 22, 1936, pp. 691, 695.

Leptodeira torquata ochrorhynchus Dunn, Proc. Nat. Acad. Sci. 22, 1936, pp. 691, 695.

Hypsiglena texana Stejneger N. Amer. Fauna., 7, May, 1893, p. 205 (type description); type locality, "between Laredo and Camargo, Texas"; Streeker, Baylor Bull., XVII, No. 4, 1915, p. 40.

Hypsiglena ochrorhynchus texana Stejneger and Barbour, Check list N. Amer. Amph. Rept., 1917, p. 93; 2d Ed. 1923, p. 104.

I have hesitated to venture an opinion on the validity of the supposed species, *Hypsiglena venusta* Mocquard, *Hypsiglena chlorophaea* Cope or *Hypsiglena texana* Stejneger, because of insufficient specimens. It is likely that when sufficient material is available, certain of these will be recognized as subspecific forms. (Dunn, 1936, has recently recognized *venusta*.) Differences in the character of the skull is marked in specimens from San Diego county, California, Northern Mexico and Arizona. The snout is short and blunt in the former, elongate and projecting over the mouth in the latter.

The species is represented in my collection by six Mexican specimens from the following localities: EHT, No. 4595, 1½ miles northwest of Saltillo, Coah., August 24, 1932, H. M. Smith; 4596, five miles southwest of Hermosillo, Sonora, June 22, 1934; 4597, near La

Posa, 10 miles northwest of Guaymas, Sonora, June 20, 1934; 4598, five miles northwest of Guaymas, Sonora, 1934; 4599, 32 miles west of San Pedro, Coah., August 25, H. M. Smith; 5202, Huasteca Cañon, 11 miles west of Monterey, Nuevo León, June 16, 1936. (Unless otherwise mentioned, the specimens were collected by me.) The scale formula for the three Sonora specimens is 21, 21, 17, 15; that for the three specimens from Nuevo León and Coahuila is 21, 21, 19, 17.

Table of data and measurements (in mm.) of *Hypsiglena ochrorhynchus* Cope.

Number	4597*	4598	4596	4595	4599	5202
Sex.....	♀	♂	♂	♀	♂	♀
Ventrals.....	177	181	178	175	174	172
Subcaudals.....	54	63	60	41	56	41
Supralabials.....	8-8	8-7	8-8	8-8	8-8	8-8
Infralabials.....	10-10	10-10	10-10	11-11	10-10	10-10
Preoculars.....	2-2	2-2	2-2	2-2	2-2	2-2
Postoculars.....	2-2	2-2	2-2	2-2	2-1	2-2
Temporals.....	1-2-3	1-2-3	1-2-3	1-2-3	1-2-3	1-2-3
Anal.....	2	2	2	2	2	2
Total length.....	408	397	399	365	362	391
Tail.....	69	73	74	53	66	55
Frontal length.....	4	3.9	4.2	3.6	4	3.8
Frontal width.....	2.5	2.3	2.7	2.8	2.3	2.8
Head length.....	17	16	15.8	15	13.5	13.7
Head width.....	10	9.6	9	9.2	9	9.3
Eye.....	2.3	2.3	2.3	2.15	2.2	2.2
Eye to nostril.....	2.8	2.95	2.8	3	2.8	2.6
Spots.....	59?	70	70	53	49	56

* The numbers 4596, 4597, 4598 bore the field numbers of 120, 266, 281, respectively, and are so referred to in Taylor (1936). The total length as given is in error. These are snout-to-vent measurements. No. 281 should read, 326 mm.

Hypsiglena affinis Boulenger

(Plate XXXVII, fig. 3)

Hypsiglena torquata Günther, Biologia Centrali-Americana, Rept. Batr., Oct. 1894, p. 137 (part.).

Hypsiglena affinis Boulenger, Cat. Snakes British Mus., II, 1894, pp. 210, 211, pl. 8 (type description; type locality Zacatecas and Jalisco); Mocquard, Bull. Soc. Phil. Paris, (9), I, No. 4, 1899, p. 157 (Guadalajara); and Mission Scientifique au Mexique et dans l'Amérique Centrale, Rept. livr. 16, 1908, pp. 868-869, pl. 69, figs. 2, 2a, 2b, 2c (México); Werner, Zool. Jahrb., 57, 1929, pp. 124, 125 (Key).

Leptodeira torquatus torquatus Dunn., Proc. Nat. Acad. Sci., 22, 1936 (part.).

This species is represented in the collection by a single male specimen, No. 4601, collected by H. M. Smith, near Magdalena, Jalisco, June 1, 1935. It agrees generally with the type description.

Scale formula, 23, 19, 19, 17, 15; ventrals, 162; subcaudals, 45; anal divided; upper labials, 7-7; lower labials, 10-10; preoculars, 1-1 (no subocular); postoculars, 2-2; temporals, 1 + 2 + 3; 5 labials touch anterior chinshields, which are very distinctly larger than the posterior; scale pits single; order of size of labials, 1, 2, 3, 4, 7, 6, 5. Total length (mm.), 297; tail, 46; frontal, 3×2.7 ; head length, 10; width, 7.6; eye, 1.7; eye to nostril, 2; maxillary teeth, 4, with four interspaces (which probably bear teeth normally) followed, after a short diastema, by a pair of enlarged fanglike, ungrooved teeth.

The general ground color is gray-brown with a median series of spots and three lateral series on each side, the median spots largest, but some tending to break in two on the median line. The smaller lateral spots are arranged to alternate with the median spots and with each other. The head is brownish, and a narrow longitudinal nuchal line is present. The nuchal collar is cream color. The first dark nuchal blotch covers six to eight scale rows; the cream collar, which precedes it, covers six scale rows. The dark band running back from the eye does not cross the cream collar to join the dark nuchal blotch laterally. The band is bordered by a narrow white line above and below. Very slight pigmentation is evident on the edges of the chin. Below, the abdomen and subcaudal regions are white. On the sides above the anus, the scales bear rounded, knoblike tubercles or keels (probably present only in males).

I am convinced that this form is distinct from either *H. torquata* or *H. ochrorhynchus*, on the basis of the presence of only 19 scale rows, the absence of the lower preocular (subocular) and the characteristic color pattern.

The present known distribution includes Zacatecas, and Jalisco in México.

Hypsiglena torquata torquata Günther

(Plate XXXVII, fig. 3)

Leptodeira torquata Günther, Ann. Mag. Nat. Hist. (3), V, Feb. 1860, p. 170, pl. 10, fig. A (type description; type locality, Laguna I., Nicaragua); Troöschel, in Müller, Reisen in den Vereinigten Staaten, Canada und Mexico, III, 1865, p. 612.

Pseudodipsas fallax Peters, Monatsb. Akad. Wiss. Berlin, 1860, p. 520.

Liophis janii Dugès, Mém. Ac. Montpellier, VI, 1866, proc.-Verb. p. 32 (*vide* Boulenger).

Comastes quincunciatus Jan, Elenco Sist. Ofid., 1863, p. 102, and Icon. Gen. Ofid., 38, 1871, pl. 1, fig. 1. ("Mazatlan," "Costa Rica," "Caracas," "Mexico"); Troöschel, in Müller, Reisen in den Vereinigten Staaten, Canada und Mexico, III, 1865, p. 612.

Hypsiglena torquata Cope, Bull. U. S. N. M., No. 32, 1887, p. 78; Günther, Biologia Centrali-Americana, Rept. Batr., Oct., 1895, p. 137 (*part.*); Boulenger, Cat. Snakes British Mus., II, 1894, p. 210, 359 (Ventanas, Durango; Presidio, near Mazatlán, Sin.; Nicaragua); Gadow, Proc. Zool. Soc. London, June 6, 1905, pp. 224, 241; Mocquard, Mission Scientifique au Mexique et dans l'Amérique Centrale, Reptiles, livr. 16, 1908, pp. 867, 868 (*part.*) figs. 3 (?); Werner, Zool. Jahrb., 57, 1929, pp. 124, 125.

Leptodeira torquata torquata Dunn, Proc. Nat. Acad. Sci. 22, 1936, pp. 691, 694, 695 (part.)

This species is represented by two specimens collected twelve miles south of Puente de Ixtla, Morelos. Both were collected from under rocks. The following data are taken from EHT. Nos. 5200, 5201, respectively (measurements in mm.); sex, ♀, ♀; scale formula 25, 21, 21, 19, 17 in both; ventrals, 166, 164; subcaudals, 39, 36; upper labials, 7-8, 7-7; lower labials, 9-10, 9-9, the first pair separated; preoculars (pre- and subocular), 2-2, 2-2; postoculars, 2-2, 2-2; temporals, 1 + 2 + 3, 1 + 2 + 3 (2 + 2 + 3 on right side); scales touching first chinshields, 4-5, 4-4; total length, 460, 412; tail length, 59, 54; scale pits single; anterior chinshields largest or equal in size to second pair; white collar, 4 scale rows wide; frontal longer than distance to end of snout in both; frontal length, 4.2, 4; frontal width, 3.1, 2.9; head length, 15.3, 14.3; head width, 11, 10; eye length, 2.2, 2; eye to nostril, 3, 2.8; spots on dorsal line approximately, 56, 52. The anterior maxillary teeth are 4 on each side (with probably four missing teeth, making a total of eight on each side), followed by two large fangs, which show no trace of a groove. There is a nuchal dark line in one, only small spots in the other, neither connecting with the large dark nuchal blotch. This blotch is four scale rows long medially, seven or six and one half long laterally. The dorsal pattern of both specimens consists of a median series of spots which are divided in two at one or two regions on the back; when unbroken the spots are quadrangular and separated by transverse cream lines. The spots are brownish lavender on a dull, gray-lavender; two rows of smaller dots laterally; top of head dark with minute whitish flecks; a diagonal cream-white line from below the eye and a white line along the lower labials; a broad brown band from eye to jaw angle, bordered above with cream; chin heavily pigmented; outer edges of the ventrals with some pigment.

USNM No. 31385 ♂, Colima, Mexico. Xantus coll. This specimen shows certain anomalies. The prefrontals fused; posterior chinshield longer than anterior; 4 scales touch anterior chinshields; upper labials, 8-7; lower labial, 8-8; 2 preoculars; 2 postoculars; rostral pushing between the internasals slightly. One very large anterior temporal on left side, with a tiny scale below (destroyed on left side); frontal, length, width 3.5 mm. × 2.7 mm.; parietal, 4.5 mm. long; parietal to end of snout, 5 mm.; nasal divided; eye diameter, 1.7 mm.; eye to nostril, 2 mm.; scales preceding divided

preanal, partially fused; scale formula, 22-21-21-17-15; ventrals, 166; subcaudals, 42. Typical markings; slight amount of pigment on anterior chinshields; slight pigment on edges of ventrals; about 52 median dorsal spots. Head flecked with deep brown.

USNM No. 51479 ♀, San Blas (?Nayarit), Mexico. Prefrontals normal; rostral short above, not pushing between internasals; posterior chinshields longer than first; two preoculars; two postoculars; temporals, 1 + 2 + 3, frontal length, width 3×2 mm.; frontal to tip of snout, 2.7 mm.; parietal, 4.2 mm.; upper labials, 8-8; lower labials, 10-10; scale formula, 26-21-21-19-17; ventrals, 171; subcaudals, 39. Anal divided. Five scales touch first chinshields, which are shorter than posterior pair. First neck band notched behind, 7 or 8 scale rows wide; 3-4 scale rows behind parietal, white; head flecked with deep brown; 54 dorsal spots. Total length, 295 mm.; tail, 40 mm.; head length, 12 mm.; width, 6.5 mm.

USNM 46513. Tupátaro, Michoacán, has a band on neck with a narrow median and two lateral projections pushing forward, the lateral ones connecting with the line behind eye; head light, finely flecked to between eyes. This marking on neck is strongly suggestive of the nuchal mark in *H. ochrorhynchus*.

The parietals are short (5.3 mm.); parietal to end of snout, 6.5 mm.; frontal length (4 mm.) equal to its distance from tip of snout; anterior chinshields equal to second pair; 4-5 scales touch first chinshields; labials 4 and 5 enter eye; diameter of eye, 2.4 mm.; distance between eye and nostril, 3 mm.; scale formula, 26-22-21-21-18-16. Upper labials, 8-8; two preoculars; nasal divided, the posterior part very large; ventrals, 173; subcaudals, 38. Total length, 420 mm.; tail, 54 mm.; length of head, 18 mm.; width of head, 10.4 mm.

I am indebted to Dr. Leonhard Stejneger and Dr. Doris Cochran for the privilege of studying these forms in the National Museum.

Boulenger's specimens from Ventanas, Durango and Presidio, Mazatlán, Sinaloa, appear to agree in general with my specimens. These three specimens are males with the following combined (ventral-subcaudal) scale counts: 222, 219, 221; the Guerrero (female) specimens, 200, 205. This maximum-minimum variation 14-22 is comparable to the variation of 12 in the types (presumably male and female). The probability is that 7-7 is the normal formula for upper labials in western Mexican specimens.

Hypsiglena torquata dunklei subsp. nov.

(Plate XXXVII, fig. 1)

Holotype. MCZ. No. 42594; collected August 10, 1934, Hacienda, La Clementina, near Forlon, Tamaulipas, by David Dunkle.

Diagnosis. The most northern variant of *Hypsiglena torquata*, varying in the following characters from the typical form: Rostral bent far back over the snout, which is somewhat compressed (wedge-like) rather than rounded; the length of the part visible above more than three fourths its distance from the frontal; prefrontals subtriangular, rather than square, due to the fact that the rostral enters between them, reducing the length of the suture between them; posterior chinshields largest; lower labials, 11-11; loreal irregularly shaped, not square; ventrals, 162, subcaudals, 57; males with tubercular knobs on scales on side above anus; vertical diameter of eye minutely less than one half interorbital distance.

Description of the type. Head rather depressed, the snout extending beyond mouth 1.3 millimeters; width of rostral (2.6 mm.) much less than total length (3.6 mm.), the upper part reflected back over the snout, its posterior point wedged in between the internasals; length of rostral seen above equals three fourths or more of its distance from frontal; suture between the internasals about one half of the length of the scale, length of internasal about two thirds the width (1.5×1 mm.); prefrontals (2.1×1.6 mm.) wider than long; frontal longer than wide (3.3×2.4 mm.), longer than its distance to the tip of the snout, and about equal to length of the parietal, which is equal to the distance from parietal to the internasals; nostril between two nasals, chiefly in the anterior; loreal irregular, much longer than high; two preoculars, upper very large, widely separated from the frontal, the lower wedged in between the third and fourth labial; two postoculars, upper largest; temporals, 1+2+3; (1+3+4); fourth and fifth upper labials enter orbit; mental wider than long; lower labials, 11-11; five touch the anterior chinshields, which are somewhat shorter than the posterior; posterior chinshields almost wholly separated by two scales; six scales between first wide ventral and last lower labial; scale formula, 30, 21, 21, 19, 17; ventrals, 162; anal divided; subcaudals, 57. Scales generally smooth, save that those on sides in anal region have tubercular knobs or keels (probably present only in males); a single apical pit present.

Color (in alcohol). Ground color light buff, with a series of dorsal spots of brown, the spots, separated by narrow light lines about a scale wide, are about the length of three scales; occasionally

one half of the spot will tend to alternate with the other half; a large dark-brown or purplish-brown spot on the neck, about the length of seven scales, reaching laterally to outer scale row; this preceded by a white or cream collar involving the posterior fourth of the parietals, not interrupted on side of neck or medially; snout and head flecked with brown, less dense on the parietals; a wide brownish band from eye to angle of mouth; brownish flecks on anterior upper and lower labials; two rows of lateral spots alternating with the dorsal row; 43 spots on body; 23 on tail; below immaculate.

Measurements (in mm.). Snout to vent, 314; tail, 59; tail, divided by total length, .154; head length, 12.2; width, 8; length of eye, 2; eye to nostril, 2.1.

Remarks. There are eight smaller maxillary teeth preceding two large fanglike teeth; the fangs bear no trace of grooves. The ventral count is lower, the subcaudal count higher than any specimens I have seen of *torquata torquata*.

I am indebted to Mr. A. Loveridge for the privilege of studying this specimen. I dedicate it to Mr. David Dunkle, the collector.

PLATE XXXV

FIG. 1. *Trimorphodon bi-scutatus* (Duméril and Bibron). EHT-HMS, No. 5339. Hda. El Sabino, Uruapan, Michoacán. Raymond Bresson, collector. Total length, 875 mm.

FIG. 2. *Trimorphodon upsilon* Cope. EHT-HMS, No. 4569. Near Magdalena, Jalisco, Elev. 1300 m. H. M. Smith, collector. Total length, 656 mm.

FIG. 3. *Trimorphodon paucimaculatus* Taylor. Type. EHT-HMS, No. 4570. (Field number 709.) Near Mazatlán, Sinaloa. E. H. Taylor, collector. Total length, 880 mm.

FIG. 4. *Trimorphodon lambda* Cope. Topotype. EHT-HMS, No. 4572. Near Guaymas, Sonora. E. H. Taylor, collector. Total length, 788 mm.

PLATE XXXV

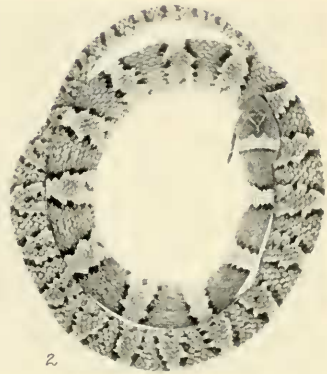


PLATE XXXVI

FIG. 1. *Trimorphodon vandenburghi* Klauber, K. U. Museum. No. 8497. Near San Diego, Cal. E. H. Taylor, collector. Total length, 485 mm.

FIG. 2. *Trimorphodon latifascia* (Peters). EHT-HMS, No. 5439. Twelve miles south, Puente de Ixtla, Morelos. E. H. Taylor, collector. Total length, 256 mm.

PLATE XXVI



1.



2.

PLATE XXXVII

FIG. 1. *Hypsiglena torquata dunklei* subsp. nov. MCZ, No. 42594. Type. Forlon, Tamaulipas. David Dunkle, collector. Total length, 373 mm.

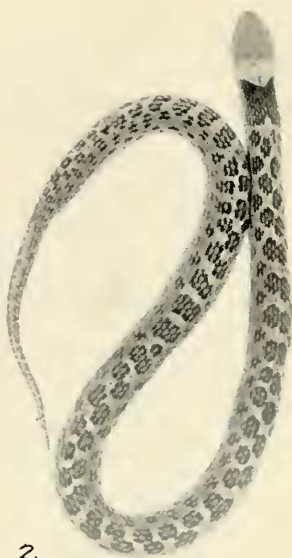
FIG. 2. *Hypsiglena affinis* Boulenger. EHT-HMS, No. 4601. Near Magdalena, Jalisco. H. M. Smith, collector. Total length, 279 mm.

FIG. 3. *Hypsiglena torquata torquata*. EHT-HMS, No. 5200. Twelve miles south of Puente de Ixtla, Morelos. E. H. Taylor, collector. Total length, 460 mm.

PLATE XXXVII



1.



2.



3.

PLATE XXXVIII

Trimorphodon wilkinsonii Cope.

Blanchard collection; collected three miles northwest of El Paso, Texas, June, 1936. (About natural size.)

PLATE XXXVIII

